Patent claims:

1. Coating composition for electrical conductors, containing

A) 1 wt.% to 60 wt.% of reactive particles with an average radius in the range from 1 nm to 300 nm based on an element-oxygen network with elements of the series comprising aluminium, tin, boron, germanium, gallium, lead, the transition metals, the lanthanides and actinides,

B) 0 wt.% to 90 wt.% of one or more conventional binders, and

C) 0 wt.% to 95 wt.% of one or more conventional additives, solvents, pigments and/or fillers,

wherein, on the surface of the element-oxygen network of reactive particles, reactive functions R_1 and optionally non-reactive and/or partially reactive functions R_2 and R_3 are bound by way of the oxygen of the network,

R_1 being contained in an amount up to 98 wt.%, R_2 and R_3 in an amount from 0 wt.% to 97 wt.% in the reactive particles, in which

R_1 represents radicals of the metal acid esters; NCO; urethane groups, epoxide groups, epoxy, carboxylic acid anhydride; C=C double bond systems; OH; alcohols bound by way of oxygen, esters, ethers; chelating agents; COOH; NH_2, NHR_4; and/or reactive resin components;

R_2 represents radicals of aromatic compounds, aliphatic compounds, fatty acid derivatives; esters and/or ethers,

R_3 represents resin radicals,

R_4 represents radicals of acrylate, phenol, melamine, polyurethane, polyester, polyester imide, polysulfide, epoxide, polyamide, polyvinyl formal resins; aromatic compounds, aliphatic compounds; esters; ethers, alcoholates, fats, or chelating agents.

2. A coating composition according to claim 1, characterised in that the radical R_1 represents $OTi(OR_4)_3$, $OZr(OR_4)_3$, acetyl acetonate, 2-hydroxyethanolate, diethylene glycolate.

3. A coating composition according to claims 1 or 2, characterised in that the function R_3 represents radicals of polyester imides and/or THEIC polyester imides.

4. A coating composition according to claim 1, 2, or 3, characterised in that the function R_4 represents radicals of acrylate resins, aminotriethanolate, acetyl acetonate, polyurethane resins and/or butyl diglycolate.

5. A coating composition according to claim 1 to 4, characterised in that the reactive particles of component A contain a network of elements of the series comprising titanium, aluminium, silicon and/or zirconium bound by way of oxygen.

6. A coating composition according to claim 1 to 5, characterised in that the reactive particles of component A have an average radius from 2 nm to 80 nm.

7. A coating composition according to claim 1 to 6, characterised in that monomeric and/or polymeric element-organic compounds contained are orthotitanic acid ester, orthozirconic acid ester, titanium tetralactate, hafnium tetrabutoxide, tetraethyl silicate and/or silicone resins.

8. A process for coating metal conductors by application of a coating composition, characterised in that a coating composition according to one of claims 1 to 7 is applied.

9. A process according to claim 8, characterised in that an electrically conductive wire is used as the metal conductor.

10. A process according to claim 8 and 9, characterised in that a pre-coated electrical conductor is used.

11. A process according to claim 8 to 10, characterised in that the coating composition according to claim 1 to 7 is used as a single-layer application and/or as a base coat, middle coat and/or top coat.

12. The use of the composition according to one of claims 1 to 7 for coating metal conductors.